

Evaluating the Implementation of Forest and Land Fires Prevention and Alleviation Policy in Jekan Raya Sub-district, Palangka Raya City, Indonesia

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Abstract

Forest fire – especially the one which is related to social-economy impact nationally and regionally – interests many people. Indonesia is a high-level forest fire country and most of forest fires happen in Kalimantan. Regarding this issue, government has decided a policy of preventing and alleviating forest fire that is socialized to regional area including Palangka Raya. The policy is decided through Local Government Rule of Palangka Raya Number 7, 2003. The rule is about preventing and alleviating forest and land fires. This research aims at describing: 1) the background of research, 2) implementation of policy, and 3) impact of forest and land fires prevention and alleviation policy in Jekan Raya Sub-district, Palangka Raya City.

This research used descriptive-qualitative method with interactive analysis technique. The research data were obtained from interview and focus group discussion (FGD) as the primary sources. In addition, the secondary data were obtained from literary review as the secondary sources. The research scope was Jekan Raya Sub-district, Palangka Raya City. The research results showed that: 1) forest and land fires happen continually and even they can be said as a cycle. Therefore, the government decided to decrease forest fire number by enhancing people's, apparatus and other elements' awareness to get involved within it; 2) the policy of forest and land fires prevention and alleviation are implemented in the three main components: identifying characteristics and causes, organizing work systematically and realizing the law; 3) the impacts of forest and land fires prevention and alleviation policy are: the hotspot level decreases from year to year as well as there is a well-organized work system from government, TSA and society. Related to law implementation, we can see the implementation of the policy through the implementation of customary law; while sanction of any violation is given based on the rule that has been decided.

Key words: public policy, policy evaluation, forest and land fires

INTRODUCTION

The income earned from forest reaches billions US dollar every year. There are around 20 up to 30 million of people work in forestry sector directly or indirectly (Sunderlin et al. 2000). In micro scale, forest has significant role as the life source for local people who earn money from forest crop – mainly from non-wood crops such as rattan, resin, medicine plants and many others. In addition, forest is used as the place of ritual and religious activities by local society (McCarthy 2002).

Indonesia is the one of countries which has the largest forest including lowland, mountain and moonsoon forest which are rich of biodiversity. It is not surprising then if forest becomes the main source of livelihood for most people (Indarto, 2013). However, the potential of forest in Indonesia, as time goes by, degrades and undergoes deforestation. One of forest degradation types is forest fire. According to Tacconi (2003), forest fire is considered as potential threat for sustainable development since it gives direct effect to the ecosystem, carbon emission, contribution and biodiversity (during 1997-1998, forest and land fires happend in 23 provinces in Indonesia. There is around 11 hectares of land burned out (Tacconi, 2003). Some researchers conclude that the main cause of forest and land fires are human's activities influenced by social, economy and political conditions such as investment and mistakenly-managed forestry sector (Applegate *et al.*, 2001, Dennis *et al.*, 2005). For example, the picture of great forest fire in 2002 that wracked 35.496 hectares of land, showed that this particular fire happened in the area which is covered by weed grass and bush, that is HTI area and previously it became HPH area (Forestry Minister, 2002).

According to Center for International Forestry Research (2013), Indonesia does not have holistic control system of forest fire, although the government rule bans the use of fire to open land (for example, policy of PHKA General Director Number 152/Kpts/DJ/VI/1997, policy of Forestry Ministry Number 107/KptsII/1999, policy of Government Number 4/2001 about Control of Environment Degradation and/or Pollution related to forest or forest fire). Government also has formed Control of Forest and Land Fires Center, the Unity of Forest and Land Fires Controller, as well as coordination team of national control of forest and land fire.

According to WWF, forest fire in Central Borneo, especially in Palangka Raya, continuously happens every year. It means that the effort to prevent forest fire in Palangka Raya should be seriously taken into account.

Government of Central Borneo province attempts to implement some steps to prevent forest fire through Governor Rule Number 5, 2003. Afterward, government of Palangka Raya city also issues Local Rule Number 07, 2003 related to Forest and Land Fires Prevention and Alleviation in Palangka Raya city as the anticipation and control system of forest fire that continuously happens and gives bad effect socially, economically and ecologically.

Some policies issued as the result of revolution effort in forestry sector through supervising and controlling forest fire have not been conducted optimally yet. It can be seen through forest fire happens in Palangka Raya city. Therefore, there should be evaluation toward the implementation of policy related to the control of forest fire.

RESEARCH METHOD

Area Description

This research was conducted in Jekan Raya sub-district as the one of sub-districts in Palangka Raya. The width is 352,62 km² and the population density is 330,32 people/km² (BPS, 2013). Most of lands are used for forest, swamp, underbrush, turf, river, as well as society based-farming and plantation. Seeing such composition, forest and land fires remain to be threatening in every dray season.

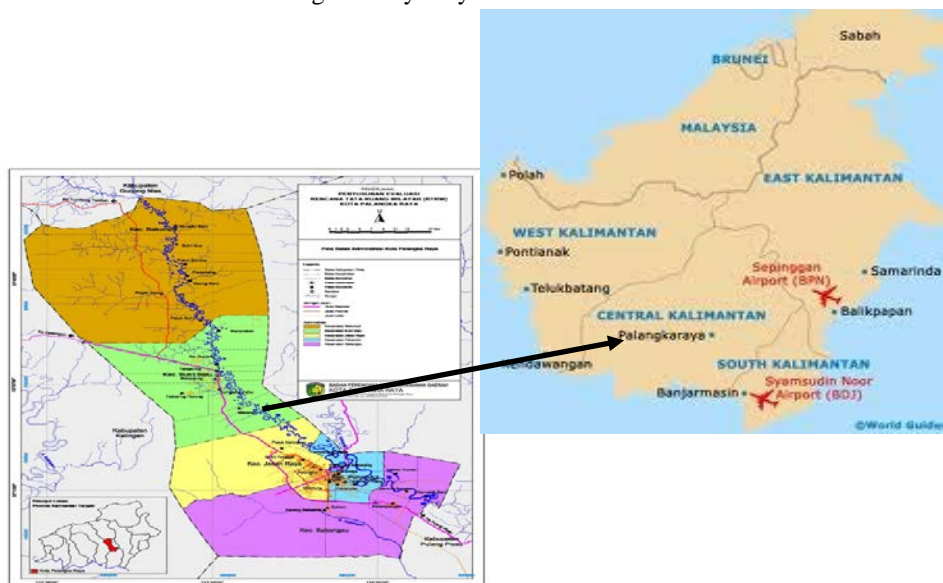


Figure 1. Research Location Map

This research was conducted during May-July of 2013 by using qualitative descriptive approach. The research data – both primary and secondary data – were obtained from research informant as well as relevant literature data. Primary data collection was conducted through unstructured-interview and focus group discussion, while the secondary data were obtained through literary review.

RESULT AND DISCUSSION

1. Situation and Problem

Peat forest fire in Central Borneo reaches approximately 2,5 million ha, including One Million Hectares Field Project area; it is around 797.000 ha (Page et al, 2002). In 2006, forest fire that happened in Central

Borneo caused high smoke fogging since August up to November as well as ecology, economy and socio-cultural problems. The smoke fogging caused health damage such as Acute Respiratory Infection, bronchial asthma, bronchitis, pneumonia, skin and eyes irritation. Some countries, such as Malaysia and Singapore as well as many elements in national and international level worry the effect of it. Smoke fogging pollution happens repeatedly, even it happened in many years when there was no ENSO in Indonesia and neighbor countries. When ENSO happened (during 1997-1998), Indonesia underwent the most terrifying forest fire in the world.

Based on Luca Tacconi' research (2003), it can be interpreted that the aims of issuing forest fire prevention and alleviation policy involve some following points:

- a. Structurally, the policy in local level of Palangka Raya government is the following up of government plan and it functions as rule implemented in local level.
- b. Decreasing and repressing social, economy as well as environment impacts for country and local society purposes.
- c. Increasing people's awareness and roles related to the significance of maintaining the environment sustainability that may contribute to long-term advantages.

2. Implementation of Land Fire Prevention and Alleviation in Jekan raya Sub-district

a. Identification of Characteristics and Main Causes of Forest and Land Fires in Jekan Raya Sub-district

Jekan Raya is an area with the highest population density in Palangka Raya. The use of land is mainly intended to people's farming. Only a few of land which is used for plantation or other sectors.

1) Characteristics of Farming System in Jekan Raya Sub-district

Rice Farming System in Jekan Raya by using burning-land preparation was started by cutting down activity on July. Cutting down activity was always continued with rice seeding preparation. This aims at preparing the rice to be planted when the result of cutting down activity is dry and ready to be burned out. The ashes as the result of burning activity can be used to fertilize land as well as neutralize the land acid.

The second one is non-burning way and it is known as non-processing way. It was introduced by government in 2002. The land that was previously used to plant rice – and the rice was harvested during February-March – was let in rotation period in order the land could recover itself naturally. For the land on which a lot of hays grew – since it did harvest system by using crab and a lot of grass grew on it during July – was sprayed by herbicide.

Preparing farming land by using burning way is mostly used by people in Jekan Raya since it is less money-consuming, efficient and effective. The ash as the result of burning process is believed that it is useful to fertilize land. In addition, the use of burning way is due to the condition of the land that should be burned or the land is in the form of underbrush and thus it should be burned in order we can plant something on it.

2) Characteristics of Fire Location

Burning method-land farming sweeping is one of fire sources that possibly causes fire as the result of dry brunches that have been burned and they are darted off. In addition, it is also caused by fire. In other words, it happens because fire springs out after the mouse or birds nest are burned out and the ashes are spread out everywhere. This then causes land fire.

Fire also usually happens in idle land area owned by people who live in the city. Such land is similar to private investment. The land may reach 26,9% of Jekan Raya area large. Idle land fire seems to be ignored since it is considered that there is nothing to be saved. Besides, it is also as the breeding place of plant disease.

b. Forest and Land Prevention and Alleviation System in Jekan Raya Sub-district

Generally, forest and land prevention and alleviation system is done by people, especially people who mainly use traditional system in burning process. This program is initiated by socializing policy and aspects of forest and land fires prevention and alleviation, forming official unity to prevent and alleviate fire, handling forest fire as well as implementing the law.

1) Socializing and Enhancing People's Capacity

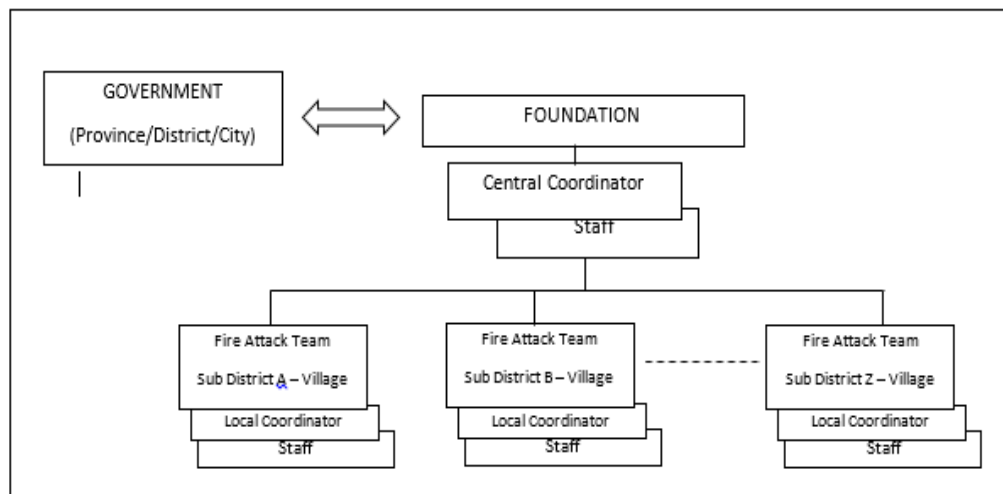
Policy socialization in Jekan Raya is conducted by local government of Palangka Raya through Life Environment Institution and it is facilitated by government in the level of sub-district and village. The

socialization aims at enhancing people's understanding of some rules as the foundation of forest and land fires prevention and alleviation policy. This particular socialization is conducted through panel discussion. There are some village apparatus as well as society figures in Jekan raya who attend the discussion.

Formal socialization is followed up with some informal activities that emphasizes on enhancing people's awareness through face-to-face dialogue. There are various kinds of communication techniques: visiting people's houses, delivering speech in a room, public speech in open place in which the number of audience is not limited and visual aids are used. The implementation of awareness enhancement is followed by the enhancement of people's capacity by giving technique knowledge in terms of preparing land by using burning way including controlled-burning, utilizing ditch as the border, using fuel to reduce biomass and introducing zero burning technique. For long-term period, this program is intended to conduct zero burning land preparation.

2) Forest Fire Controller Organization

Article 18 of Local Rule Palangka Raya Number 7, 2003 that regulates *Tim Serbu Api (TSA)*/ Fire Attack Team as an organization that has authority in conducting forest fire prevention. Basically, forming similar organization has been conducted in the previous years, yet the organization less accommodated people's role. TSA is under government supervisor. The position of TSA is described as follows:



Organizational technique aspects of TSA can be described as follows:

- The membership and duties are centered in village level. The one who is responsible of it is the village chief and he/she is in control of center coordinator in sub-district level. Ideally, one TSA consists of 20-30 people. The members of team should fulfil some following important criteria:
 - a) Physically and mentally healthy,
 - b) 18-50 years old
- c) The background of member candidate: society/farmer. The member of TSA should be tightened into a job contract in which the duty, responsibility, sanction, right and compulsory are mentioned. The members of TSA get technical training that is held by using four module-lesson material that is composed based on field experience in 1997 and 2002, when peat forest fire happened. Method and strategy of TSA are developed together with CIMTROP that can be detailed as follows:
 - Alleviation Technique

Teknik Sekat Bakar Diairi (KATIR)/ Watering and Burning Border Technique method is used to fight a fire in the forest that is less accessible by extinguisher car. Another method recommended by TSA is using *Bom Air Plastik (BOMTIK)*/ Plastic Water Boom. This method emphasizes more on massive movement. BOMTIK can be created by using wash water waste and it is wrapped by sugar plastic.
 - Implementation Strategy

In alleviating forest and land fires, TSA use some following strategies:

 - (1) TSA should stay near to the fire location so that extinguishing activity can be executed during the day/ 24 hours.
 - (2) Use land water to fight a fire in dry season. This is done by creating 12-18 meters of drill well under peat layer.

- (3) The duty and responsibility of TSA members are divided into four work shift; they are: morning shift (6 a.m-12 a.m), day shift (12 a.m-6 p.m), night shift (6 p.m-12 p.m) and early day (12 p.m-6 pm).
 - (4) Extinguishing activity is conducted during the day. Sometimes, fighting a fire at night is easier than doing it in the morning due to the cold weather and a little flame of fire. Extinguishing at night should be executed if the fire movement endangers the saved target, or in order the land that has been sprayed out is not burned out.
 - (5) Everyone should help and serve each other. This is important for TSA member to do a high risk-job.
- **Funding and Property**
- Based on TSA technique and strategy, there should be tools and properties for at least one group of TSA. Furthermore, operational funding is in care of local general revenue and expenditure budget that is regulated in Article 18, verse 3, Local Rule of Palangka Raya city Number 7, 2003. The funding involves prosperity guarantee for TSA member.
- 3) **Law Implementation**
- In the context of law, forest and land fires happen due to human's attitude and has law consequence. However, what happen in Jekan raya sub-district is a kind of forest fire that is caused by local people's field cultivation or in other words, burning activity. More specifically, forest and land fires in such areas, are usually caused by uncontrolled-field burning.
- Based on such condition, there should be further study on some rules in order we can appropriately describe the law implementation. The followings are the rules as the foundation of law implementation related to forest fire alleviation in Jekan Raya:
- a) Law number 23, 1997; it is about Life Environment Management
 - b) Law number 41, 1999; it is about Forestry
 - c) Government Rule number 4, 2001; its is about Damage Alleviation
 - d) Local Rule of Center Borneo Province number 5, 2003
 - e) Local Rule of Palangka Raya city number 7, 2003
- To explain clearly about law implementation related to forest and land fire in Jekan Raya sub-district, we should consider some following concepts:
- (1) Fire characteristics are caused by people's farming activities to prepare the land before plant something on it. It means that the special land burning is conducted by people's customeries to prepare land and farm.
 - (2) The local rule of Palangka Raya number 7, 2003 classifies land burning as planned-burning based on preparation technique and the impact of it. Planned-burning is conducted with clear goals, while unplanned-burning is due to human's dereliction.
- Based on the concepts, the government of Palangka Raya city conducts law implementation related to forest and land fires prevention and alleviation policy in Jekan Raya with some following principals:
- (1) Burning, that is done by local society and customary law especially related to field and farming preparation, is facilitated by permission mechanism to burn. Permission mechanism is organized further in the rules of smallest governance area that involves mechanism, land large,time and climate condition when burning is conducted.
 - (2) Permission (like what has been stated in point 1) may not be given to burning activity related unplanned-field preparation. If it is given, it may cause forest and land fires. It similarly happens to planned-burning out of permitted time and climate.
 - (3) As the realization of appreciating local culture like what has been stated in Rule of Palangka Raya government Number 4, gives the space to implement customary law related to uncontrolled-planned burning that causes fire out of the intended land. Sanction is implemented through giving fine that is determined based on customary chief.
 - (4) Out of law violation like what has been stated in point 3, the sanction is implemented based on the rule.
- 3. Study on the Impact of Forest and Land Prevention and Alleviation Policy in Jekan Raya Sub-district**
- Real impact of the implementation of forest fire prevention and alleviation is remains far from the intended goal. This is related to the difficulty in adapting land preparation by using zero technique for people. Preparing land with burning way has been involved in society culture and it is inherited from generation to the next generation.
- People see zero burning is less certifiable and much time-consuming. There are many people who choose unplanned-burning alter their technique with planned-burning to prevent forest and land fires. Such effort is done to prepare some prevention activities including creating ditch and reducing biomass by using other things, so that the provided fuel relatively reduces. A number of farmers who start to shift into semi-

burning effort with some efforts to repair physical and chemical peat land through three ways: (1) adding lime, (2) cultivating land mixed with animal compost and (3) adding ashes.

People's knowledge enhancement can reduce forest and land fires level that are shown by lower level of hot spot in Jekan Raya sub-district. This condition contributes to reduce smoke that becomes important issue locally, nationally and internationally. People start to burn by coordinating and making group. Burning activity is conducted in turn in one period of burning and it moves to other land after the fire has been extinguished. The coordination is conducted together with TSA in each area. Besides, as the additional personnel, TSA becomes the technical contributor that helps people to do burning activity.

Law implementation gives impact indirectly to the local culture revitalization through implementing customary law in regulating society. Fire anticipation is conducted through controlled-burning, farmers' agreement and customary rules. People respect the agreement and rule since they will always relate to society. According to people's view, if burning activity causes fire spring to the neighbor lands it may cause much money-consuming since we have to change the lost and customary fine – including social sanction.

4. Evaluation of Forest and Land Fires Prevention and Alleviation in Jekan Raya

Evaluation of implementing the policy of forest and land fires prevention and alleviation in Jekan Raya sub-district is focused on the aspect of achieving target and goal, organizing as well as implementing the law. The result of evaluation can be described as follows:

a. Achieving Goal and Target

The goal of deciding the policy is preventing forest and land fires that have become international problem especially related to the impact of smoke that disturbs environment health and economy. After the researcher examined the fact, the goal that has been determined has not been achieved yet. In fact, people are difficult to alter burning system into zero burning agriculture pattern. It is caused by the relationship between agriculture pattern and local culture, economy factors and the condition of land which are not appropriate to people's agriculture commodity. Since the policy is a long-term policy, achieving the goal can be considered as success achievement. This is shown by more planned and organized-land burning pattern beside the effort to implement zero burning technique although it is remain in very small scale and it is done by people with higher level of economy.

b. Work Organizing

Work organizing has been oriented to the synergy of three related elements: government, TSA and society. The three elements are able to work based on each duty and authority. The basic problem is the work that tends to be sporadic and it is done in the seasons in which forest fire possibly happens. Forest and land prevention and alleviation usually stop out of such condition. This is contra with understanding of prevention that is basically activities done continuously.

Another problem in work organizing is funding source restrictiveness based on Rule of Palangka Raya government Number 7, 2003 and only local general revenue and expenditure budget which must be responsible of it. It causes low prosperity level of TSA and it is incomparable with the work and risk level. Although TSA members are not structured officials, their duties – base on the law – show that they have right to get compensation and appropriate guarantee.

c. Law Implementation

According to the Government Rule number 4, 2001 and Local Rule of Central Borneo Number 5, 2001, it is compulsory for Governor to conduct inventory toward certain business and/or activities that tend to cause damage or life environment pollution related to forest and land fires that give cross-city impacts (it can be done by pointing certain institution that has authority in forest and land fires prevention).

Regent's obligation is to inventory business and activities that tend to cause damage and/or life environment pollution related to forest and land fires in the local area.

Regarding certain special things, forest and land burning can be done by asking permission firstly from the authorized regent. The rule of asking permission is regulated by local government. The special things related to forest and land burnings are: 1) forest and land burning for specific purpose, inevitable conditions such as forest fire alleviation, plant disease extermination as well as flora and fauna habitat supervision. The limited burning activity should be permitted by authorized official, 2) People's customary or tradition in opening land for agriculture.

In order the case of forest fire whether it happens inside or outside of field area has law assurance, the Government Rule number 4, 2001 demands the governor or regent to inventory toward business or activities that may cause damage and/or life environment pollution related to forest and land fires. This authority is firmly stated in Local Rule number 5, 2003.

Seeing such rules, the governor's and regent's duties to do inventory are definitely important. However, according to the writers' analysis, this particular duty has not been conducted well yet. There should be certain instruction and rules since the output of inventory is law assurance related to the owner and large of farming activity.

Regarding planned-burning for special purpose, inventory is very important and it should be legalized by the authorized officials. Sanction should be firmly given if: 1) burning activity is conducted before get legalization from the authorized officials, and 2) burning activity happens outside the land that has been inventoried.

B. Conclusion

Based on the explanation and study on forest and land fires prevention and alleviation policy in Palangka Raya city, especially in Jekan Raya sub-district, we can conclude that:

1. Forest fire in Central Borneo in which Palangka Raya becomes one of the source areas of forest fire, is a situation happens continuously and it can be said as cycle. Therefore, the level of forest fire should be decreased by enhancing people's, apparatus' and other elements' awareness.
2. Forest and land fires prevention and alleviation policy in Jekan Raya sub-district can be implemented in three principals. The first one is identifying the characteristics and causes. Second, systematical work organizing to guarantee the policy can be implemented well. The last, law implementation to guarantee law assurance related to the rights and obligations of some elements.
3. The impact of forest fire prevention and alleviation policy in Jekan Raya sub-district remains far from the intended goal since land burning becomes one of people's cultures. The level of forest and land fires shows that hotspot level decreases from year to year. Another positive impact there is a well organized work and synergy among government, TSA and society. In implementing law, the real impact of policy implementation is utilizing customary law to apply sanction for every violation related to special burning case. For other types of violation, sanction is given based on the law.

C. Recommendation

Based on the evaluation of the implementation of forest and land fires prevention and alleviation policy in Jekan Raya sub-district, the writers recommend some following points:

1. The problems of forest fire and its impacts are the issues closely related to conservation. Such characteristic is not reflected in the policy that has been decided and applied by government of Palangka Raya city. Government tends to anticipate and alleviate the forest fire. The effort to alleviate land or area that is previously burned out, has not been maximally conducted. It is recommended to the government to integrate such condition with the balance between preventing and alleviating forest and land fires as well as repairing the area as the result of burning activity and thus it is greatly expected there will be a sustainable and holistic policy.
2. Some weaknesses in implementation aspects mostly talk about funding and work organizing. Funding should not be only from local general revenue and expenditure budget, but also from the policy itself. It means that beside spending local budget, the implementation of this particular policy should be economically useful. One of the alternatives is by empowering TSA to cultivate the land that is previously burned out by planting long-term commodity.
3. There are some problems related to law implementation, especially law assurance. In other words, we cannot guarantee exactly whether giving reward and punishment have been successfully done. Inventory of business and activities that potentially cause forest fire and/or the land has not been maximally conducted. So, there is no valid data. The writers recommend the government to accelerate data basing and inventory in order the sanction of any kind of violation related to land burning activities can be firmly implemented and thus it will lead to the realization of law assurance.

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